



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
CHEMICAL SAFETY AND
POLLUTION PREVENTION

MEMORANDUM:

To: Gene Benbow PM 07

From: Helen Hull-Sanders, Ph.D., Entomologist

Secondary Review: Pesticide Efficacy Review Committee (PERC)

Date: 2/26/2019

Subject: RESPONSE TO REBUTTAL

THIS DER DOES NOT CONTAIN CONFIDENTIAL BUSINESS INFORMATION

Note: MRIDs found to be **unacceptable** to support label claims should be removed from the data matrix.

DP barcode: 450263

Decision no.: 537946

Submission no: 1029238

Action code: R350

Product Name: Zyrox Fly Granular Bait

EPA Reg. No or File Symbol: 100-1541

Formulation Type: granular bait

Ingredients statement from the label with PC codes included:

Cyrantraniliprole 0.5% PC: 090098

Application rate(s) of product and each active ingredient (lbs. or gallons/1000 square feet or per acre as appropriate; and g/m² or mg/cm² or mg/kg body weight as appropriate):

Broadcast and bait stations: Low populations: 0.2 lb./1000 feet². High populations: 0.4 lb/1000 feet². Glue boards and sticky cards: 0.1 oz/inch². Water dilution: Dilute 0.5 to 1.5 ounces bait/1 fl. oz. water, apply in six- to twelve-inch bands, to disposable cards, or to rope-wick.

Use Patterns: Apply to outdoor waste areas around commercial establishments, outdoor areas of commercial operations and outdoor areas of agricultural animal production facilities. Zyrox Fly Granular Bait may be used indoors at the sites listed above as a water diluted application if placed in bait stations suitable for granular baits with the exception of walkways within caged-layer houses or penned animal facilities where Zyrox Fly Granular Bait may be applied as broadcast scatter bait.

I. Action Requested: Review the rebuttal submitted by the registrant in response to the previous review (DP 446036) which rejected all efficacy claims against "crawling insect pests" such as cockroaches as well as blow flies, face flies, bottle flies and flesh flies

II. Background: The registrant previously submitted MRID 50490501 that included 20 appendices of data to support claims against green bottle flies, Calliphorid flies, blue bottle flies, stable flies, cockroaches (German and

American), fire ants, carpenter ants, dump flies, house flies and non-public health pests, fruit flies and silverfish for the registered product 100-1541. Efficacy claims against house flies and stable flies were supported. The registrant has submitted a rebuttal to this review for MRID 50490501, to which the Agency responds in this DER. The registrant's full response is attached to the review; a description of each of the registrant's rebuttal points is presented below along with the Agency's response.

III. MRID Summary:

MRID 50490501. Zyrox (A20708A) – Efficacy Data to Support Use of Cyantraniliprole Bait for Control of Flies and Cockroaches.

Rebuttal Point #1: Indoor Use Only for New Claims. In DER #537946, the reviewer recommended that all new uses be allowed indoors only, leaving the only outdoor uses as those already on the current label. Syngenta disagrees with this position and asserts that the requested new uses should include both indoors and outdoors for the following reasons:

- a. In EPA's Draft Performance Test Guidelines, OCSPP 810.3500: Premises Treatments, dated Feb 1, 2018, specific guidance is provided for laboratory studies of fly bait products (section t, pp 29-31); however, there is no mention of field testing. Due to the mobility of flies and that control (or population reduction) of flies under field situations typically involves a multifaceted IPM approach, there are no clearly defined methodologies for demonstrating >90% mortality of flies with a bait product under field conditions. With this in mind, we chose to provide the Agency with laboratory data under which conditions would be better controlled.
- b. Simulated field data were provided for stable fly (MRID #50490501, Appendix 11) that showed that under outdoor caged conditions, 90% mortality of stable flies were observed within 4 days, while the UTC mortality remained <10%. This field cage study with stable fly demonstrates that whether the flies are killed indoors or outdoors, Zyrox is effective.
- c. No claims of effectiveness of Zyrox aged indoors or outdoors are being made. The reviewer stated in the Executive Data Summary, that "outdoor use claims are not supported (only unaged bait was tested and only indoor studies were provided)". Since 1) Syngenta is not asking for claims that aged bait is effective, 2) Zyrox has existing indoor and outdoor claims for house fly on the current label, and 3) we provide an additional outdoor field cage study (stable fly, Appendix 11) that further demonstrates that the product kills flies in the outdoor environment, we argue that the claims requested should include both indoor and outdoor use.
- d. The Agency, understanding the challenge of conducting field trials with highly mobile insects like flies, has previously accepted cage tests for demonstrating efficacy for fly control products, and indoor tests have sufficed for both indoor and outdoor conditions. To our knowledge, there are no fly bait registrations that differentiate between indoor and outdoor application when using broadcast applications, except where cautions to avoid application within the reach of non-target species (e.g., restricting application in poultry houses to walkways). We believe this distinction between indoor and outdoor instructions unnecessarily complicates the directions for use and would make the label more confusing to the applicator. Further, should the Agency decide to make a distinction on fly bait labels between indoor and outdoor use, this would constitute a precedent that is not supported by currently accepted testing guidelines.

EPA Response: The registrant is basing their rebuttal on the Meeting Minutes and Final Report for the Federal Insecticide, Fungicide, and Rodenticide Act Scientific Advisory Panel Meeting Held May 8-9, 2018. While the Agency will use the Minutes to inform the guideline documents, the Agency is currently reviewing all the comments and recommendations for the draft Premises Guideline to determine applicability/practicality for product performance testing; however, they are under no obligation to use any of the recommendations from the panel. Having provided this caveat, the Agency was given specific recommendations for testing fly baits with the inclusion of field, laboratory and *semi-field* tests (in some circumstances) to determine if flies can and will locate baits, feed, and subsequently die. Appendix 11 of MRID 50490501 provided data from both the laboratory and a "semi-field" test to support stable fly efficacy when applied in a bait station at a rate of 0.215 lbs/1000 sq ft and was classified as **Partially Acceptable** in the original review. However, it was applied above the labeled rate; the replication in the laboratory (3 replications of 25) was below the current recommendation of 5 replications of 50; there was no indication where the four tents were erected (indoors vs outdoors) and the control for the tents was located *within* the

tent, therefore the Agency concluded that the tents simulated indoor rooms. The Agency concludes that Appendix 11 supported kills stable flies indoors.

Rebuttal Point #2: Starvation period excessive. The proposed guidelines suggest a four-hour period, however, in the FIFRA Scientific Advisory Panel Meeting Minutes and Final Report No. 2018-05, page 14, a starvation period of 12 hours was recommended. In all of the Zyrox studies reviewed in this submission, each was conducted as a choice test, with alternative food and water provided along with bait in the test arenas. Under these circumstances, test animals were not forced to contact or consume the test bait but did so by choice. Given that, the starvation period is less relevant versus a no-choice design in which the test animals would be forced to consume the test bait. Based on recent dialogue with the Agency and the discussions around the draft guidelines published in Feb 2018, we recognize the usefulness of a limited starvation period. In the future, we plan to further limit the starvation period. However, we believe that, for the studies in the DER that were deemed unacceptable due to concerns about the starvation period, the concern is overstated for the following reasons: 1) in the trials of concern (Appendices 4, 10, 14, 15, and 19), a starvation period of 24 hours or less was used, and in several cases 12 or 18 hours, which is better aligned with the SAP recommendation; 2) all were choice trials, which mitigates the effect of starvation periods, as evidenced by the relatively low UTC mortality [high mortality in UTC would indicate that starvation might have been a mitigating factor], 3) in the case of German cockroaches, a starvation period of 24 hrs has a limited effect on the vigor of cockroaches and is a well-accepted starvation period among cockroach researchers. For these reasons, we ask the Agency to reconsider those studies that were deemed unacceptable based on the starvation period.

EPA Response: In the initial efficacy review, one reason the appendices were deemed unacceptable was that the starvation periods were excessive. For the specific Appendices noted by the registrant, Appendix 4 the insects were starved 24 hours prior to bait exposure; Appendix 10 the insects were starved 20 hours prior to bait exposure; Appendix 14 the insects were starved “overnight” which is an imprecise time and length could not be determined; Appendix 15 the insects were starved no more than 24 hours, but no less than 6 hours which is an imprecise time; and for Appendix 19 male insects were starved for 24 hours prior to bait exposure. The Agency currently allows for a starvation period of no more than 4 hours, but prefers that no period of starvation be used, to mimic a more real-life scenario. Should the Agency incorporate the SAP recommendation mentioned above, for the specific Appendices noted by the registrant, all starvation times were variable/inconsistent and/or exceeded the SAP recommended 12 hours.

In addition, Appendix 4 was rejected because the tested rate exceeded the labeled rate, the replication was low and the number of individuals varied between replications. Appendix 10 was not evaluated because the insect tested (*Hydrotaea* spp.) was not identified to species and it was unclear if all individual dump flies tested were the same species. Appendix 14 was rejected because the Agency currently recommends 50 individual flies per replication and only 30 individuals per replication were tested (Note: the SAP recommends 100 individual flies per replication). Appendix 15 was similarly rejected because only 20 individuals per replication were tested. Appendix 19 was rejected because there was only a single replication of 50 individual male cockroaches tested per treatment. Therefore, the Agency’s conclusions were not solely based on starvation period.

Rebuttal Point #3: Stable fly – bait station rate of 0.215 lbs / 1000 sq ft. Syngenta asks, for the sake of label clarity and to avoid potential confusion of the product end user, that 0.2 lb/1000 sq ft be used on the label rather than 0.215 lb/1000 sq ft recommended by the reviewer. Syngenta observes that the reviewer calculated this 0.215 rate based on the cage size of 21.4 x 7.67 ft = 164 sq ft (16 g applied in 164 sq ft equates to 0.215 lb/1000 sq ft). However, this calculation doesn’t account for the fact that flies utilize a three-dimensional space - with most of the time not sitting on the floor of a cage - so that the calculation of the treatment area as a two-dimensional square area does not fit well biologically and only serves as a measure for the applicator. In fact, RISE commented on the proposed guidelines that cubic measure should be taken into consideration (pg 4. RISE letter to EPA dated March 19, 2018). More importantly, the difference of 0.015 ounces would be difficult to measure with reasonable confidence in the field and is unlikely to impact product efficacy. Thus, to provide for label clarity, user convenience, and effective enforcement of the label, we ask the Agency to reconsider this difference and allow the consistent use of 0.2 lb as the low rate, instead of 0.215 lb as the reviewer recommended.

EPA Response: In the initial efficacy reviews, it was noted that the tested rate was 0.215 lbs/1000 sq. ft. The Directions for Use on the product label states: “Apply 0.2 lb (3.2 oz) of Zyrox Fly Granular Bait per 1000 sq ft...” The application is not written in 3-dimensional space and it was not tested in 3-dimensional space. The registrant may indicate that the bait station application rate for stable flies is 0.215 lbs/1000 sq. ft. or 0.22 lbs/1000 sq. ft., but

not 0.2 lb bait/1000 sq ft.

Rebuttal Point #4: Rates in Cages in Relation to the Label Rates. In the DER, the reviewer states "...it is unclear how the tested bait station rate (1 gram per cage) translates to the labeled rate of 0.2 lb/1000 sq ft...". This concern seems to strongly contribute to the Reviewer's conclusion that studies where this was noted were deemed unacceptable (Appendices, 2, 3, 4, 5 (partially acceptable), and 8). However, the recommendations of the SAP suggested that laboratory testing of fly baits need not be tied to the label rates, and that it is important to assure that ample bait is supplied during the testing. See SAP report, page 22:

"Baits provided to flies should not be restricted to label rates. This method depends on ample amounts of bait to kill the flies. Even if every fly fed to repletion, there should be ample bait left over in the treatment cages. For application purposes, volumetric measurement of the bait is preferred, although the registrant can choose to weigh out the bait material. Containers for presenting bait to test insects can be the choice of the registrant with a suggestion of using aluminum weigh boats (3-inch diameter); other shallow containers should test 100 flies per 15 to 20 ml of bait."

Further, similar comments on the proposed Premise Testing Guidelines were offered by Responsible Industry for a Sound Environment (RISE):

"In general, using the lowest label rate for bait testing could result in ineffective testing because the amount of bait per chamber would not be representative of a real-life bait application. When applicators use baits, they ensure there is enough bait to control the population, which may require more than the lowest label rate, depending on the situation. Converting label rates, which may be in pounds per 1000 square feet, to the scale of a laboratory chamber results in studies that use a miniscule amount of bait per chamber. Some bait formulations may only allow for one or two pieces of bait per chamber that are consumed by a few test organisms, and the remaining test organisms are unable to eat the bait. It would be helpful if EPA addressed these issues by allowing an amount of bait appropriate to the study, which often may be significantly more than the lowest label rate."

Syngenta agrees with the comments of the SAP and those from RISE that limiting the amount of bait placed in a test cage to the lowest labeled rate risks inadequate bait quantity for the limited test space and can adversely affect an experiment. It was with this rationale that several of these "Unacceptable" studies exceeded the label rate with the placement of bait in the cage. It is on this basis, we ask the Agency to reconsider this issue and upgrade those affected studies to Acceptable.

Finally, the DER mentioned concern about how application rates for diluted bait, painted on a card or applied by rope wick, and the application of dry bait granules to sticky cards, are related to the label recommendations for a broadcast application, e.g., 0.2-0.4 lb/1000 sq ft. This comparison is not valid as the deployment of bait across methods differ significantly. These methods are deployed by placing the cards, rope or bait-painted surface in focal areas of fly activity therefore linking these methods to broadcast application rates may not be appropriate.

EPA Response: The Agency does not dictate the application rates or methods for products. However, *the efficacy testing* rate and methodologies for application of the product should match the directions for use (DFU) on the product label. Evidence should be provided to show how the tested rate translates to the labeled rate. Laboratory bait tests, particularly for flies, should be confirmatory, providing evidence of palatability and attractiveness when given a choice. They are best used *in conjunction* with field/semi-field tests in which the baits are provided at label rates based on the treated area. Typically, for flies, laboratory testing of baits is not sufficient by itself to provide evidence of claims. If the cards, rope or bait-painted surface methods are not comparable to broadcast applications, the data should be submitted demonstrating that the product is efficacious for each application methodology. Clear directions for use should be provided to the consumer for both the diluted bait and broadcast applications.

Appendix 2 was not efficacious at the rate applied and the active ingredient was not identified. Appendix 2 remains **Unacceptable**.

Appendix 3 the tested use pattern was not comparable to the labeled use pattern and the rate tested could not be determined. Appendix 3 remains **Unacceptable**.

Appendix 4 had multiple test deficiencies and remains **Unacceptable**.

Appendix 5 remains **Partially Acceptable** when the product is diluted at a rate of 1.5 oz bait/fl oz water and applied to poster board to kill stable flies. The data did not support any other application methodologies.

Appendix 8 had multiple test deficiencies and remains **Unacceptable**.

Rebuttal Point #5: Data support for a claim of Kills Blow fly. In MRID #504905501 (Appendix 1), the reviewer found the study to be unacceptable to support a control claim for blow fly (*Phaenicia*). We ask the Agency to reconsider a claim that would only state that the product kills blow flies. The main concern of the reviewer was that >10% mortality was observed in the UTC. Considering that flies were field collected (trialist states “Blow fly adults were obtained by placing beef liver in various outdoor locations and sweep netting adults attracted to the liver.”), the population was likely composed of mixed ages that would lead to higher than preferred death from natural causes. With this in mind, the 80% mortality achieved by Zyrox (100% in treated cages minus 20% in UTC = 80% mortality caused by treatments), Syngenta contends that this study demonstrates that Zyrox does indeed kill field-collected blow flies.

Data support a claim of Kills Bottle flies. In MRID #504905501 (full report in Appendix 2), the reviewer found the study to be unacceptable to support a control claim for bottle flies (*Lucilia* spp., *Calliphora* spp.). Syngenta agrees that the performance of Zyrox as a diluted application against green bottle fly was not sufficiently effective to claim control (74% mortality), however, as a granular application, Zyrox provided greater than 90% mortality with control mortality below 10% by day 4 (MRID #504905501, Table 5). In addition, in MRID #504905501, Table 6 (full report in Appendix 4), Zyrox applied as a scatter application, provided 100% mortality at 4 days with UTC mortality at 4.8%. While we accept that these studies on bottle flies were not flawless, we argue that the data are sound and support a claim that bottle flies are killed by Zyrox. Therefore, we ask the Agency to reconsider a claim that states Zyrox kills bottle flies.

EPA Response: The Agency rejects any study in which the UTC mortality is >10% prior to the product demonstrating ≥90% mortality. It has been the position of the Agency that when UTC mortality exceeds 10%, then mortality due to the effects of the product and mortality due to stochastic effects cannot be distinguished. Appendix 1 did not meet efficacy standards and remains **Unacceptable**.

Appendix 2 was rejected because the Active Ingredients and the concentration used were not identified in this study. In addition, the amount of product applied to the disposable cards exceeded the lowest labeled rate. The data by Snell, Smith and Swatts remain **Unacceptable**.

Appendix 4 was rejected because the amount applied to disposable cards exceeded the lowest labeled rate and while mean mortality of blue bottle flies was acceptable when exposed to the granular bait, the experimental design was flawed and unacceptable. Four replicates of 15 – 44 adult flies per treatment is not a balanced, replicable design. The Agency prefers a minimum of 5 replicates of 50 individuals per treatment or a statistical power analysis should be performed to justify the replication regime. The Long report remains **Unacceptable**.

Rebuttal Point #6: Reconsideration of a Cockroach Claim to “Kills German Cockroach”.

1. *Appendix 6* PPMU15306 (Pereira and Koehler) – Study missing raw data. Subsequent to EPA’s review, Syngenta acquired the raw data for the Pereira and Koehler trial. The amended report for trial #PPMU15306 (the Pereira and Koehler report), now includes the raw data and means calculated for German cockroach (Appendix 1). The raw data were inadvertently omitted at the time of submission, and we ask the Agency to consider allowing Syngenta to correct this oversight. We acknowledge that Zyrox is not fully effective on American cockroach, therefore we have amended our list of cockroach claims to be “kills German cockroach,” which as indicated by the reviewer, was effective. For the Agency’s convenience, we have summarized mortality data in Table 1 below. These data show that German cockroaches are killed by Zyrox Fly granular bait, with >90% mortality achieved after 3 days with UTC mortality remaining <10% during the trial (Table 1). Graphs of these data were included in the original report (MRID #504905501, Appendix 6, Figure 2A) which was reviewed as part of the DER, however Table 1 below provides added clarity of the data. Based on the availability of the raw data for this report and the summarized data below, we ask the Agency to upgrade the German cockroach trial within the Pereira and Koehler report to Acceptable.
2. *Appendix 9* Study #USWR014042016 (D. Miller) Study – Issue was “long time to reach 90% efficacy” and “excessive starvation.” Dr. Miller’s study is solid in quality, with 5 replications and low mortality in the UTC. We ask that the Agency reconsider the conclusion about this study in the context that we are now asking for a claim that Zyrox kills German cockroaches. We ask for this reconsideration on the following basis:

- The tested population was a strain that had demonstrated resistance to indoxacarb (only 60% mortality in previous testing). In our experience, German cockroach populations that show resistance to a chemical class often take longer to be killed by other insecticides of different classes, perhaps due to elevated esterase activity or reduced feeding rates as a biological cost of maintaining the resistance. The idea of this generalized resistance is also suggested by the low level of mortality observed with the Maxforce treatment, where only 12% mortality was observed at Day 14, and only 43% mortality was achieved during the course of the study. This low mortality with MaxForce is not typical of the performance of this industry standard and strongly suggests the population had a broad base of insecticide resistance. With resistance evident in this population, kill times longer than normal would be likely. We believe this was the case in this study. At Day 14, 88% control with Zyrox and by Day 17, mortality reached 90%. Given the apparent difficulty in controlling this population of German cockroaches, we believe the data strongly supports the conclusion that Zyrox kills German cockroaches. Further, it is evident that while this resistant population may not be commonplace, it is critically important to the PPM industry to have products from different chemical classes in the marketplace to help combat resistance. At this time, there are no other diamide chemistries registered for control of cockroaches in the US and Zyrox represents a valuable tool to delay resistance to existing registered chemistries.
 - Regarding the starvation period being excessive in this study, we ask the Agency to also reconsider this aspect. The starvation period was 18 hr, prior to which the cockroaches were fully fed and watered. The SAP recommended a starvation period of 12 hr, and did not qualify this recommendation as to whether it was with a choice test or non-choice. This trial was a choice test whereby the test cockroaches in the Zyrox treatment were also presented, in the same arena, with dog chow (typical laboratory food source) and water. We contend that the difference in the recommended starvation period 12 hr vs 18 hr in this trial is inconsequential in the context of a choice test, where cockroaches are in no way forced to eat the test bait. Therefore, we respectfully ask the Agency to consider the validity of this trial since this test was a choice test and that the 6 hr deviation from the recommended starvation period of 12 hr is unlikely to impact the test results. In general, German cockroaches show considerable tolerance to starvation, thus, this aspect of the trial should not be considered as a significant concern that renders the trial unacceptable. We respectfully ask the Agency to reconsider this study as Acceptable, particularly in light of the effectiveness of Zyrox against a resistant German cockroach population.
3. *Appendix 19 Trial # PPMU16308 (Matos and Schal) – Raw data not provided.* In regard to the Matos and Schal trial (MRID #504905501, Trial # PPMU16308, Appendix 19), the reviewer was concerned that the raw data from this published article were not provided. We acknowledge the need to provide raw data to the agency, unfortunately Syngenta was unable to acquire the raw data for this trial (as it is apparently in the possession of now departed ex-graduate student of Dr. Schal). In spite of not having the raw data available from the Schal study for verification purposes, we believe the published study does have some value as supplemental data that indicates that Zyrox does kill cockroaches under field conditions. While we recognize that published studies are not typically considered by the Agency as fully acceptable data to support a claim, we ask the Agency to view this study as supplemental data to support the kills claim of German cockroaches. The professional reputation of Dr. Schal's lab is well established and Syngenta maintains that this study contributes to the weight-of-evidence that shows Zyrox kills German cockroaches.

EPA Response: The raw data obtained by the registrant was not submitted to the Agency for review. The Agency requests the raw data such that when a question about the experimental design or efficacy arises, our reviewers can confirm the calculations. Table 1, page 11 of the rebuttal (reads amended Appendix 1, but applies to Appendix 6), does indicate that male German cockroach mortality was $\geq 90\%$ on Day 3 with 0% UTC mortality; however, details were not provided either in Appendix 6 nor the rebuttal how the granular bait was supplied in the testing arenas. In addition, only male German cockroaches were exposed. The Pereira and Koehler report (Appendix 6) may be upgraded to **Supplemental**.

For Appendix 9, the Agency currently allows for a 4-hour starvation period, but prefers that insects not be starved. The SAP recommended allowing an 8-12 hour starvation period for *flies*, but made no recommendation for other insects. Should the Agency accept the SAP recommendation that was made for flies and apply it to all insects, 18

hours still exceeds the recommendation. The Agency does not evaluate product specific data based on comparative, “positive” controls. Male German cockroach mortality was $\geq 90\%$ after day 14. The Agency accepts bait efficacy that exceeds 14 days *with justification*. The argument that tested cockroaches kept in colony since 2012 were resistant to Maxforce FC Magnum, a fipronil product that effects the GABAA receptors of the CNS, may also be resistant to the cyantraniliprole product that effects the calcium channels of the muscle cells including the heart muscles is spurious at best. The cyantraniliprole product was eventually efficacious, but the delay in efficacy should not be justified *post hoc* by the use of “resistant” cockroaches (see Journal of Economic Entomology 86:6 pg 1639-1644, 1993). The Miller report remains classified as **Unacceptable**.

For Appendix 19, cockroaches were starved for 24 hours prior to testing. The Agency appreciates the registrant’s attempt to obtain the raw data; however, the publication remains **Unacceptable**. Only a single replicate per treatment with “equal numbers of same-aged insects” was reported. The experimental design was not scientifically rigorous. Moribund, not dead, individuals were used for mortality counts; survivorship had to be estimated from figure 2 in which the contact treatment and control had the same survivorship curves; and if contact control was also used in comparison with ingested treatments, control mortality exceeded 10% prior to ~90% treatment mortality.

IV. EXECUTIVE DATA SUMMARY:

The overall conclusion for MRID 50490501 remains **Partially Acceptable**. Additional controls and outdoor use claims were not supported. Appendix 6 may be reclassified as Supplemental; however, no additional claims were supported. The original review indicated that the bait stations could use at a low rate of 0.2 lbs/1000 square feet as applied to house flies, while bait station use at a low rate of 0.215 lbs/1000 square feet or now 0.22 lbs/1000 square feet as applied to stable flies indoors. Future applications should submit each individual study that will be considered in support of a product as separate MRID documents.

V. APPENDIX SUMMATION:

- (1) List of Appendices, the tested organisms, and the conclusion for the individual study
 - a. Appendix 1, blow flies, unacceptable
 - b. Appendix 2, green bottle flies, unacceptable
 - c. Appendix 3, green bottle flies, screwworms, unacceptable
 - d. Appendix 4, blue bottle flies, unacceptable
 - e. Appendix 5, stable flies, partially acceptable
 - f. Appendix 6, German cockroaches, American cockroaches, Red Imported fire ants, carpenter ants, reclassified as supplemental for German cockroach data only.
 - g. Appendix 8, dung flies, stable flies, grey flesh flies, unacceptable
 - h. Appendix 9, German cockroaches, unacceptable
 - i. Appendix 11, stable flies, partially acceptable
 - j. Appendix 12, house flies, partially acceptable
 - k. Appendix 13, house flies, unacceptable
 - l. Appendix 14, house flies, unacceptable
 - m. Appendix 15, house flies, unacceptable
 - n. Appendix 16, house flies, partially acceptable
 - o. Appendix 17, house flies, partially acceptable
 - p. Appendix 19, German cockroaches, unacceptable

q. Appendix 10, German cockroaches, supplemental